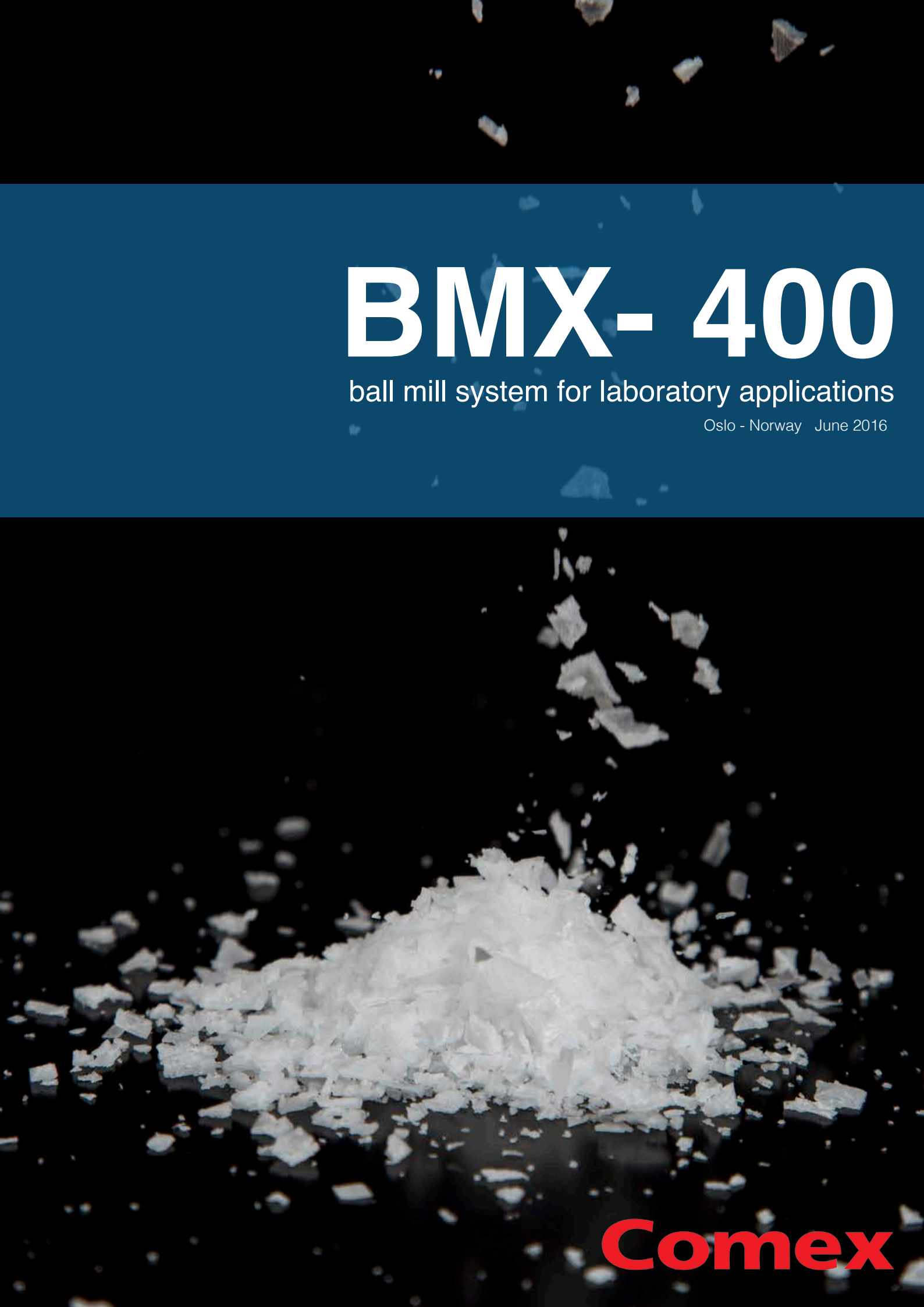

BMX- 400

ball mill system for laboratory applications

Oslo - Norway June 2016

Comex

BMX- 400 ball mill system for laboratory applications

Grinding systems, which include ball mills, are usually very complex and complicated. They require ball mills working in the closed circuit with an air classifier and a complete circuit has to be connected in the pneumatic transport system. Such systems often require significant investment in the operating equipment together with an advanced instrumentation. In addition, a test work carried out with such grinding circuits is very complex, requires a long grinding time for several hours and consequently demands a lot of input material.

Comex AS – Norway has developed a new grinding system employing a ball mill working with an air classifier in the closed circuit, for a laboratory use. The equipment is very compact, requires small amount of input material and the operating system provides fully automatic test procedures with registration of almost all operating parameters in the control unit. The process capacity is typically in the range of few kg per hour, which provides a significant flexibility regarding test work with small material portions, different settings and operating parameters. The system can also simulate conditions in large grinding mills by setting a required process temperature up to 150 deg. C. Finally, the particle size distribution can be measured at the outlet by the on-line analyser providing constant control of the produced particles. All parameters are registered in the system and can be exported to XL after testing.

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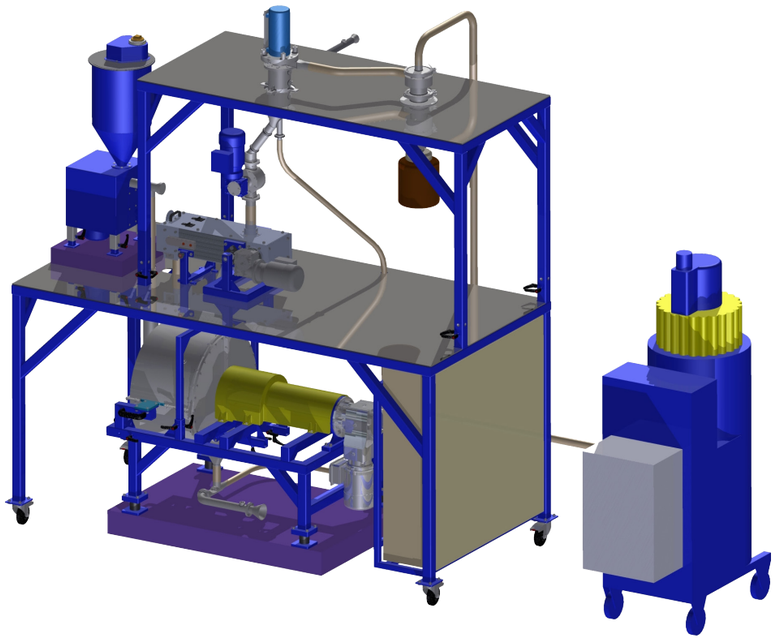
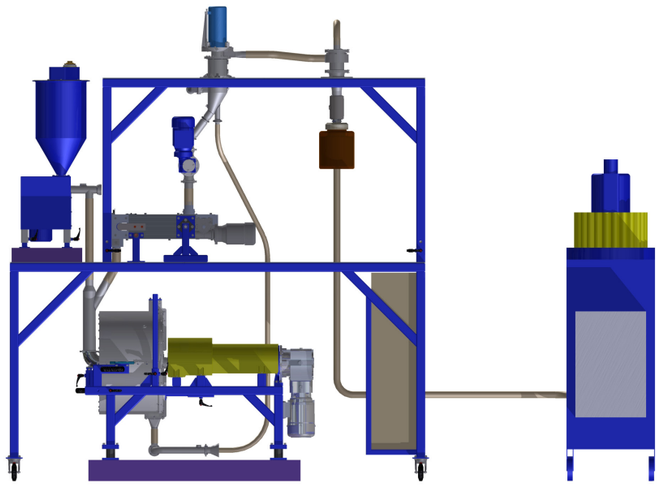
BMX- 400 ball mill system for laboratory applications





Main features of the BMX-400 grinding system

Feeding

- Feed rate measurement by the “loss of weight” system
- Possibility to add chemicals (grinding aids)
- Mechanical stirring of the hopper to provide efficient flow of the material

Ball mill unit

- Mill diameter 400 mm
- Mill motor power 370 W
- Temperature control from 30 to 150 deg. C
- Mill speed and torque sensor
- Mill weight control

Air classifier

- Product top size adjustment from 3 to 300 microns
- Adjustment of all air flow rates
- Measurement of the return stream mass flow rate

Cyclone and filter

- Cyclone with the cut-off valve for sampling
- Filter with automatic cleaning cycles

Control and instrumentation – parameters registered and stored in the system

- Feed rate control in kg/h
- Dosage of chemicals in g/t
- Mill speed in rpm
- Mill torque in Nm
- Mill drum temperature in deg.C
- Mill material temperature in deg.C
- Mill material filling in kg and % of free volume
- Classifier speed in rpm
- Classifier motor load in A
- Air flow rates: main and secondary in m^3/h
- Filter fan speed in rpm
- Specific energy during grinding in kWh/t

Particle size control (optional)

- Continuous particle size measurement of the product
- Continuous particle size measurement of the classifier return
- Continuous particle size measurement of the mill discharge
- Particle size expressed as a complete curve or fixed point like d97, d80, d50 etc.

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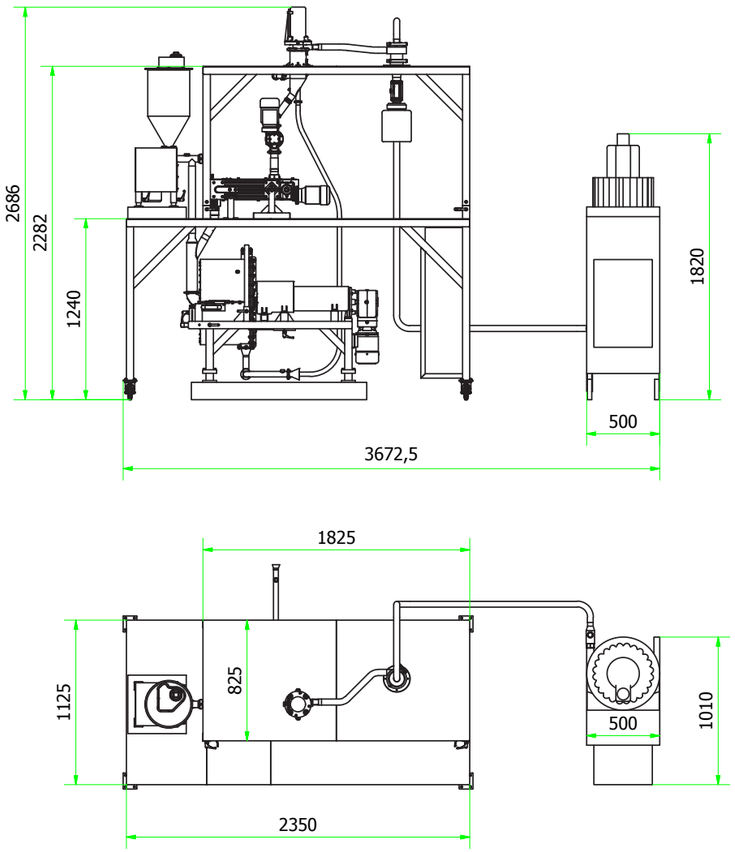

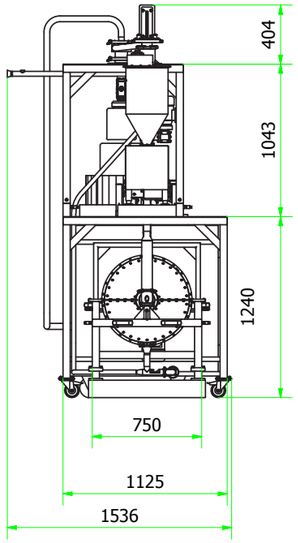

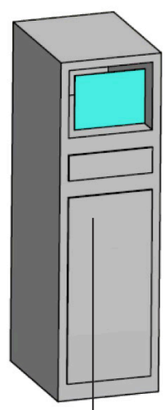

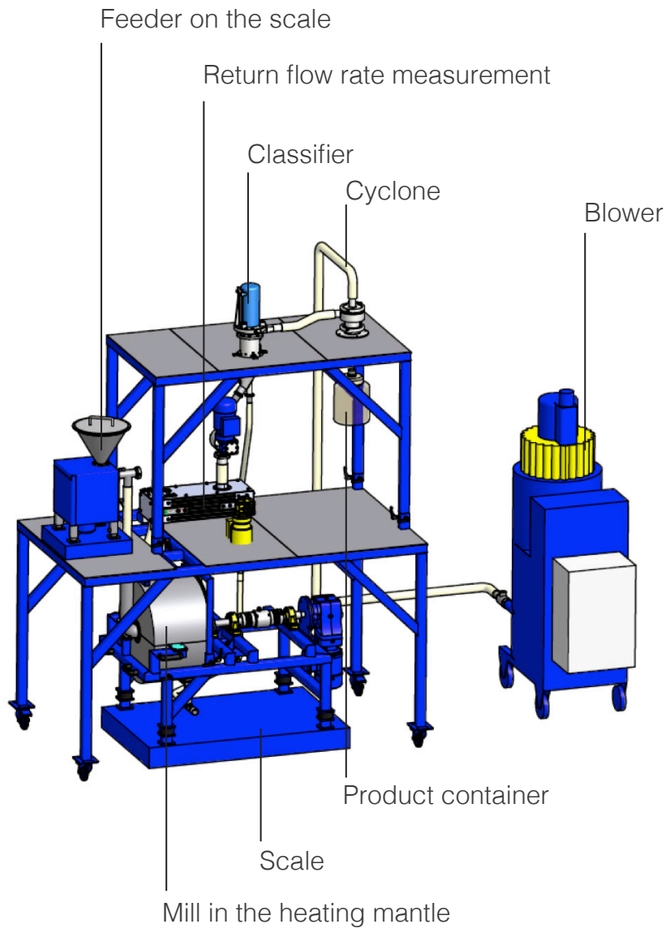

More information about the BMX grinding system can be obtained on our web site: www.comex-group.com or by sending email to: technical@comex-group.com

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